

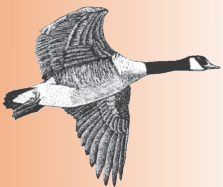
The Flyway

Fall 2015

Quarterly newsletter of Nisqually and Grays Harbor National Wildlife Refuges

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Save the Dates!

**The 2016
Grays Harbor
Shorebird
and Nature
Festival will
be held
May 6-8
in Hoquiam.**

The Comeback Kid

By Michael Schramm

Few species elicit as much attention and interest as the Bald Eagle. Their visibility is partly on account of their seven foot wing span, but also because, as they sweep back and forth across the Nisqually delta, they send thousands of waterfowl into a panic, creating a massive and exhilarating disruption. Many visitors also look forward to the wintertime Chum Salmon run, when

eagles can be seen loitering in the tall snags along the Nisqually River. From mid-December to mid-January, it is not uncommon to count forty or more eagles from a single vantage point. It is a spectacle of nature.

When eagles become such a common sight, it is easy to forget they were faced with extinction only a generation ago. The tipping point in efforts to spark conservation for eagles as well as other raptors stemmed from the tragedy of DDT. The now infamous chemical insecticide was originally hailed as a miracle preventative for insect borne disease when it was first produced commercially in the mid 1940's. After the war, DDT was widely used as a general insecticide in agriculture throughout the country. Consequently,

the chemical's environmental impact was nearly ubiquitous. As farmers and gardeners continued to use DDT, it found its way into the insects and seeds that form the base of the food chain, which were in turn eaten by small birds and fish. As a given organism ate more and more tainted insects or seeds, the

toxin was stored in the body's fat, concentrating over time—a process called biomagnification. Ultimately, the larger organisms were eaten by scavengers like the California



A bald eagle perches on the railing of the Estuary Boardwalk Trail. Photo by Christopher Cole.

Condor or by top predators, including raptors like the Peregrine Falcon and Bald Eagles. At this point, the concentration of DDT was adequate to have a serious health impact, either through direct mortality or by ancillary impacts like thinning of egg shells.

The use of DDT without proper study has become a classic cautionary tale. It took decades of research to fully understand the affects and impacts of DDT use. The US Fish and Wildlife Service recognized the potential harm as early as 1945, when it warned that DDT was "capable of considerable damage to wildlife, beneficial insects, and indirectly to crops." As evidence continued to mount and as raptor populations began to rapidly decline, use of the

Continued on page 2

On the Wing

by Glynnis Nakai

Six years have passed since the Brown Farm Dike was removed. Within that time, various projects have been conducted to monitor the physical and biological changes that result of restoring tidal influence to an area that was disconnected for more than a century. The Nisqually Indian Tribe, U.S. Geological Survey (USGS), and Nisqually Wildlife Refuge have been working together to collect data within this “living laboratory” that includes: movement of sediment, establishment of salt marsh vegetation, water quality, channel and delta geomorphology, invertebrate ecology, and salmon life cycle requirements (to name a few). Currently we are at a stage when we need to step back to evaluate the data collected over the years and identify future monitoring and research needs. The Nisqually River Foundation has joined the core team to help compile the Nisqually estuary restoration information into three formats: a colorful pamphlet summarizing the dike removal and results of monitoring efforts; a revised website describing the projects, lessons learned, and monitoring protocols; and a more technical document with research and monitoring results. These

are venues to share information with the public and other natural resource professionals as well as provide the Refuge with another baseline from which future monitoring and research projects can be prioritized.

As USGS winds down the post-dike removal monitoring programs, they are gearing up for another project, the Nisqually Delta Blue Carbon project. “Blue Carbon” refers to the ability of coastal ecosystems (tidal marshes, eelgrass beds) to capture and store significant amounts of carbon dioxide from the atmosphere helping offset greenhouse gases. By documenting the benefits of wetlands for wildlife and carbon storage, researchers hope to raise awareness about the value of salt marshes to support wetland conservation, restoration, rehabilitation, and management of the nation’s resources. Samples of soil, invertebrates, fish, vegetation, and the atmosphere within the Delta will provide values to formulate a carbon budget (input-output). Seems complex but we will share more information with you as the project develops, in addition to the post-dike removal summaries.

Look deep into nature, and then you will understand everything better. —Albert Einstein ✎

Bald Eagles

From page 1

insecticide continued. Concerns expressed by The US Fish and Wildlife Service as a result of continuing studies ultimately contributed to the Environmental Protection Agency’s ban of DDT in 1972. At this point, there were less than 500 nesting pairs of Bald Eagles left in the world.

It is estimated that there may have been 100,000 nesting pairs of eagle at the time of our nation’s founding. It may be surprising to hear that the more than 99 % decline of the species to the brink of extinction was not the exclusive result of DDT use, but that most of the decline occurred in the 19th century, long before the use of chemical insecticides. What caused the original decline of the Bald Eagle? As early pioneers expanded westward, they disrupted ecosystems and destroyed habitat to an extent that had never been seen before. It was this loss of habitat, of adequate food and resources that initially affected eagles. Human settlers directly competed with eagles for food, whether fish or waterfowl. Eagles were considered a threat to poultry and livestock, and it was considered normal to shoot the birds on sight.

The National Wildlife Refuge System was originally created to address the killing and market hunting of birds, but all species benefit from the protection of habitat. Here at Nisqually, we have two nesting pair of Bald Eagles on the bluffs adjacent to the estuary. They are a reminder of the Bald Eagle’s remarkable recovery. When the Bald Eagle was officially removed from the list of Endangered and Threatened Species in 2007, there were an estimated 11,000 nesting pairs. It is noteworthy triumph of conservation that we have, in our own lifetime, seen a species go from the brink of extinction to such abundance. What a different place the Refuge would be without eagles scaring up skittish ducks on a winter’s day! We need to continue to be vigilant in our awareness of how actions impact the environment. Bald Eagles remind us of this. ✎

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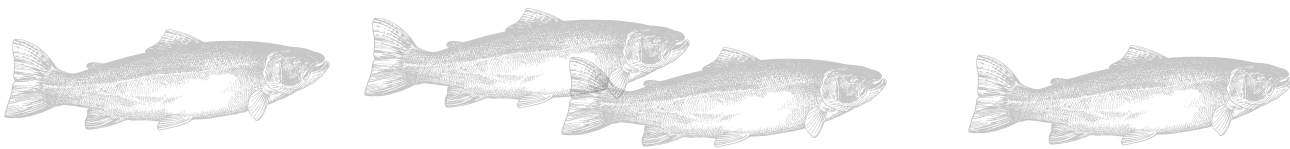
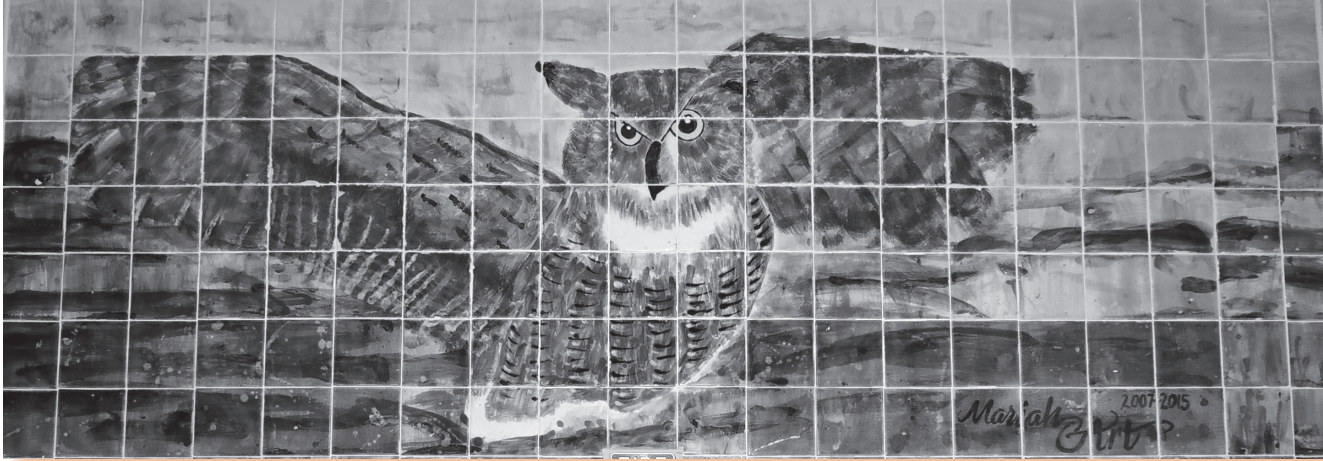
Save trees, think green.

To receive *The Flyway* electronically, email
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Mariah Art School Installs New Mural

Every year, the students of Mariah Art School create and install a mural in the entry-way of the Environmental Education Center. This year's stunning addition features a Great Horned Owl airborne and hunting. It has been aptly placed over last year's portrayal of waterfowl in a freshwater wetland area. Around 20 students rang-

ing in ages from 6 to 12 contributed to the project. The mural is the latest installment of seven that the Mariah Art School, located in West Olympia, has created and installed since the opening of the Environmental Education Center in 2009. ✂



Summer Lecture Series Inspires!



Visitors brave unusually hot summer weather to line up in anticipation of a Summer Lecture Series program at the Refuge.

Everyone who attended the lectures during the 28th Annual Summer Lecture Series was presented with a wealth of information and insight on topics ranging from polar bears, to bees, to climate change. Thanks to Friends of Nisqually NWR for their financial support of the lectures and to the speakers who so graciously gave of their time and expertise so that we could all learn. The lectures would not be possible without the help of a dedicated group of Refuge volunteers including Art Pavey, Jan Kramer, Nancy Wells, Barb Peterson, Vic Vikan, Sue Stone, Jean Phillips, Jim and Cherry Pedrick, Jerry Broadus, Donna Snow, Hank Henry, Debbie Ruggles, and Diane Claussen. Thank you all for your help! ✂

News in Brief

- ▶ For the second year in a row, all first graders in the North Thurston Public Schools will visit the Refuge this fall on a field trip. In early September, the first grade teachers participated in a half day workshop to learn about the Refuge and prepare for the field trip. Welcome to all the first graders, and thank you to all the school personnel and parents who've made this possible!
- ▶ Danika Didur-Tate has returned for a second year as the Education Coordinator for the Refuge. She is an AmeriCorps Member serving with the Washington Service Corps. We are delighted to have her back!
- ▶ The Refuge has a new Watchable Wildlife brochure. It includes abundances of bird, mammal, and fish species represented graphically throughout the year. Next time you are at the Refuge stop in and pick one up.
- ▶ All 4th grade students in the country may now acquire the Every Kid in a Park Federal Lands pass at the Refuge. In order to qualify, fourth graders must

arrive with a voucher from the official site: <https://everykidinapark.gov/>. The pass grants every fourth grader and their family free access to all federal parks, lands, and waters through the end of August next year.

- ▶ National Wildlife Refuge Week will be the second week of October. Check for special events around the country. ✂



This summer the Refuge hosted more Weekend Guided Walks and reached more visitors than ever before! Here, cheerful volunteer guide Nathaniel Swecker leads a group on a bird walk.

New and Renewing Friends Memberships Summer 2015

Senior/Student (\$15)

Sandra Bush
Lynne Edele
Beverley Lund
William Lund
Julia Mitchell
Elaine Schmidt
Lynn Cox
David Fine
Geoffrey Apgar
Joseph M. Alexanian
Angus Beaton
Sam Shultz
Herbert Stumpf
Gary Bostwick

Individual (\$25)

Michael Walker
Mary Zimmer

Jean Gillmer
Mary Gleb
Rhona Diehl
Marga Miner
Franklin & Karen Olson
Lois Ward
Donald Ayers
Allan M. Warner

Family (\$50)

Marian Mehegan
Robert & Martha Nailling
Michele Taylor
Steve Wang & Kathryn
Hamilton-Wang
Bill Fulton
Michael Young
Robert & Ruth Brigden
Dianna Pope & Michael Sherrill
Susan Barish & Irving Williams

Basil & Verena Grieco
Bob & Melanie Appel

Supporting (\$100)

Barbara Young
Beverly B. Sloane
Terry & Gerry Hodge

Friends of Nisqually NWR

is a 501(c)(3) nonprofit organization established in 1998 to promote conservation of the natural and cultural resources and fund educational and outreach programs at **Nisqually National Wildlife Refuge Complex.**

Join Friends of Nisqually NWRC!

Name _____

Address _____

City/State/Zip _____

Email _____

- ☐ Please send information on making Friends of Nisqually NWRC a beneficiary of my estate.
☐ Check here to receive an electronic version of *The Flyway* newsletter by email.

Individual/Family Memberships

- ☐ \$15 Student/Senior
☐ \$25 Individual
☐ \$50 Family
☐ \$100 Supporting
☐ \$250 Partner
☐ \$500 Patron
☐ \$1000 Benefactor

Corporate/Business Memberships

- ☐ \$250 Business Sponsor
☐ \$500 Community Partner
☐ \$1000 Sustaining Business
☐ \$2500 Corporate Patron
☐ \$5000 + Corporate Benefactor

Please make checks payable to: Friends of Nisqually NWRC, 100 Brown Farm Rd, Olympia, WA 98516

Your tax deductible contribution will help preserve the unique habitats, fish, and wildlife of the Nisqually Delta and the Grays Harbor Tideflats.

OFFICE USE Rec'd _____ Mo _____ New _____ Renew _____ Ent _____ Mld _____

**Friends of Nisqually
National Wildlife Refuge**

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Olympia WA 98516

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Permit #206

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... conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people...

**Planning a field trip to
Nisqually National Wildlife Refuge?**

Attend one of our free Field Trip Orientation Workshops to get all the tools you need to confidently guide your students on a meaningful outdoor learning experience. You will be introduced to our hands on indoor activities in our education center, hike the Twin Barns Loop Trail, and learn about one of the largest restoration projects in the Puget Sound! Refreshments will be provided.

Workshop Dates:

Saturday December 12th 9am-1pm

Saturday January 23rd 9am-1pm

Saturday February 20th 9am-1pm

Wednesday March 2nd 4pm-8pm

✱ Only teachers who have participated in a field trip orientation workshop within the past three years are able to schedule a class for their field trip between May 15 and the end of the school year. Teachers who have attended a workshop since 2011 and scheduled a field trip within the past two years may continue to schedule field trips between May 15th and the end of the school year without re-taking the workshop. ✱

Location: Education Center at Nisqually National Wildlife Refuge (From I-5 Take Exit 114 and follow signs)

Clock hours are available for a fee, approved by ESD113.

To Register: Download the registration form from our website fws.gov/refuge/Nisqually

Under the Visit tab select “For Educators” and then Teacher Training.

For more information:

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Nisqually National Wildlife Refuge
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